Environmental Threats and International Business Opportunities

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I. Introduction

Salinity is one of the most critical environmental threats, which brings adverse effects on the farmland and results in serious degradation of soil and water. A lot of parts on earth with less rainfall are suffering due to salt water, and the land value would continue to decrease unless any appropriate action is taken.

Some parts of Western Australia are the typical examples with such little rainfall as 600 millimeters or less per year. This paper examines and reports on what is the situation and how a strategic business alliance of a Japanese joint venture project is already helping to turn the environmental threats into benefits for the local community, and business opportunities.

Salinity is caused when shallow-rooted crops and pastures replace deep-rooted native vegetation. Groundwater accumulates and the water tables rise. As the water tables rise, salts stored in the soil are mobilized and carried to the ground surface. The concentration of salt on the surface causes severe land degradation. Water-logging is an associated problem and this occurs when the saline groundwater reaches the surface. This land cannot be used productively by the farmer. The problems caused by rising salinity levels need long-term, coordinated solutions. The reason is that these problems have been created over a period of a hundred years or more and cannot be solved quickly.

The local farmers in Western Australia acknowledge the need to take remedial actions. However, re-establishing native vegetation would be extremely expensive to farmers and result in a considerable reduction of production and income. The local government of Western Australia estimates that more than one million hectares of already cleared agricultural land could support commercial tree crops and, if significant numbers of trees are able to be planted as a commercial crop, landcare would become not only affordable but also profitable.

Salinity has enormous implications for the whole community. It is not an entirely natural event, but another environmental change caused by human activity. A change that threatens native vegetation and the wildlife it supports, our drinking water, and even roads and buildings as well as farmland. The cost of developing new water supplies, repairing damaged roads and lost agricultural production, has already run into millions of dollars. According to the CALM (the Conservation and Land Management agency of the local government), the south-west region of Western Australia produces agricultural products worth over 4.5

billion Australian dollars (A$) per year on around 18 million hectares of land cleared in 1994. The local Department of Agriculture estimates that 1.8 million hectares of formerly productive land have been affected by salinity.

Clearing is central to the salinity problem. With the benefit of hindsight, clearing deep-rooted perennial native vegetation and replacing it with shallow-rooted annual crops and pastures has thrown groundwater levels completely out of balance. Clearing too much of the deep-rooted vegetation for agriculture has caused salinity, and planting trees is able to prevent and even reverse the problem. In order to carry out such a straightforward solution, millions of trees would have to be planted.

Ⅱ. CALM and Forest Plantations in Western Australia

Hardwood plantations of brown mallet tree (Eucalyptus astringens) were initiated for tannin production in Western Australia in 1926, while softwood plantations of pine tree (Pinus pinaster) were established in the 1920s, following trial plantations in 1896. A total of some sixty-five thousand hectares of softwood plantations were established on both public and agricultural land purchased for pinewood planting during the period of 1933 through 1991. It has also been supported by a combination of both Federal and State Government funds, under the Federal Softwood Forestry Agreement Acts.

The CALM is one of the agencies of the State Government of Western Australia, responsible for the management of national parks, conservation parks, marine parks, the State forest and timber reserves, and all associated forest produce, native plants and animals. The CALM's budget for the 1998/99 financial year is A$228 million. It is primarily funded by its own revenue (80 percent) and by subsidies from the local government of Western Australia (20 percent). Its primary responsibility is to manage those lands and waters, on an ecologically sustainable basis, so that the needs of the present are met without compromising the choice of future generations. CALM's services include protection of ecosystems from degradation, production and implementation of land and wildlife management plans, protection of forest resources from fire and disease, establishment and growing of softwood plantations, and management of sharefarming schemes of hardwood and softwood in Western Australia.

The CALM manages more than 20 million hectares of the State's land and waters, and other natural areas that protect invaluable national assets, and its Mission Statement is to 'Conserve Western Australia's wildlife and manage lands and waters entrusted to the Department of CALM for the benefit of present and future generations'. To achieve this mission, the CALM pursues objectives that include:

* Conservation:

  To conserve indigenous plants, animals and environmental processes in natural habitats throughout the State of Western Australia.

* Value and use of resources:

  To optimize the value and economic return to the community of wildlife, lands, waters and resources entrusted to CALM without compromising conservation and other management objectives.

* Community Support:

  To promote community awareness and appreciation of the values of wildlife, lands, waters and resources entrusted to CALM and to develop community understanding and support for CALM's conservation and land management activities.

According to the organization chart, CALM comes under the Minister of Forestry of the State Government of Western Australia and is managed by an Executive Director who controls such departments of Project Management, Corporate Services, Corporate Relations, Nature Conservation, Parks, Recreation and Tourism Planning, Service and Information, Forests and nine regional Offices in the State. Under the CALM Forestry Department is the Plantation Group which consists of three units, namely Plant Propagation, Sharefarm Plantations and Farm Forestry. The Sharefarm Plantations Unit is subdivided into sub-units which are Maritime Pine, South Coast Sharefarms (SCS), Sharefarm Lower West and Estate Sharefarms. Each sub-unit has its own, or joint venture forest plantation projects.

Ⅲ. Eucalyptus Globulus

Hardwood (Eucalypt) plantations are found around the world in countries such as Brazil, Chile, Portugal, South Africa, Vietnam, New Zealand and Australia, for the purpose of producing high quality printing and writing paper. Eucalypts are considered to be an excellent source of wood for high quality paper manufacturing and can be grown on comparatively short rotations of between ten and twenty-five years.

The main types of Eucalypts grown in plantations are Mountain Ash (Eucalyptus regnans), Tasmanian Bluegum (Eucalyptus globulus), Shining Gum (Eucalyptus nitens) , Flooded Gum (Eucalyptus grandis), Blackbutt (Eucalyptus pilularis) and Karri (Eucalyptus diversicolor). Eucalyptus globulus, called Tasmanian Bluegum , is one of Australia's fastest growing trees. It can be grown in Tasmania, South Australia , Victoria and Western Australia. Bluegums are ready to harvest after ten years and then can be re-grown at least one more time from the coppice that sprouts from the cut stumps. The different species of eucalypt have different site requirements, depending on the soil, terrain and climate conditions. The Tasmanian Bluegum cannot be established in areas where rainfall is less than 600 millimetres per annum.

The first stage of processing the harvested Bluegum trees (pulpwood) into paper is woodchipping. Pulpwood is cut into small pieces called 'woodchips.' A mechanical or chemical pulping process is then used to separate wood fibers so that they can be manufactured into paper. Most paper is made from either new or recycled wood fiber, or a combination of both, depending on the grade and type of paper required.

Ⅳ. Paper Industries in Japan

Paper is an indispensable commodity in modern society. The quantity of paper consumption has been employed as a barometer to measure the level of modernization. As electronics has progressed rapidly in the 1980s and new forms of recording and storing data, as well as new methods of communication, have been introduced, a paperless society was once thought to be possible. The fact is, however, the advance of the information society has brought with it a more growing demand for paper used in copy machines, computers, facsimiles, and so forth.

Japan, the world's second largest economy, has also the world's second largest paper industry with an annual production of approximately 31 million tons of paper and paperboard in total (Table 1). The importance of paper production, especially printing paper production, has been supporting the economic growth of Japan. In 1997 Japan used over 38 million cubic meters of pulpwood for manufacturing paper and paperboard of some 31 million tons in total. Forty-two per cent of raw materials were softwood and the remaining fifty-eight per cent were hardwood. Nearly sixty-seven per cent of the total pulpwood used by the industries were imported (Table 2). The remaining thirty-three per cent was obtained domestically. Major overseas pulpwood suppliers for Japan are the United States of America, Australia, Chile and South Africa

(Table 3). As for pulpwood production, Japan ranks fourth after the U.S.A., Canada and China.

The paper and pulp industries are energy-intensive businesses and rely heavily on imported wood chips. Japan was hit by the second oil crisis in the late 1970s and Japanese paper and pulp producers experienced harsh business conditions due to sudden increases in energy and woodchip prices. Under new legislation brought in by the Japanese Government for promoting improvements to some specific industries, measures were taken such as the scrapping of excess production facilities with tax incentives, while promoting further utilization of used paper. In the latter half of the 1980s, it was fortunate for the Japanese paper and pulp industries that the appreciation of the Japanese currency, the yen, caused raw materials and energy prices to decline, and an unprecedented, robust economic growth pushed paper consumption upward, allowing the paper and pulp industries to record excellent business results.

In 1990, however, one of the worst economic recessions in Japan's postwar era began, and such problems as excessive production capacity resurfaced. The market for paper products began stagnating, while the advantage of the strong Japanese yen kept prices of raw materials and energy relatively low, which allowed manufacturers to maintain profitability. In 1993 some large-scale mergers among paper producers occurred which were necessary in order to survive severe global business competitions. Jujo Paper Company and Sanyo-Kokusaku Pulp Company merged to establish Nippon Paper Industries Company, which made it the then largest paper producer in Japan. Meanwhile, after the merger between Oji Paper Company and Kanzaki Paper Company, this new company soon made another merger with Honshu paper Company in 1996, to make it bigger than Nippon Paper Industries Company (Table 4).

The reorganization of paper and pulp industries in North America and Northern Europe had also been under way during these several years [1]. The world has seen a trend towards fewer paper manufacturers and Japan is no exception. Further reorganization, including mergers and acquisitions, under the leadership and initiatives of larger companies, could occur at any time in the future.

According to a joint study of paper demand in Japan for the twenty-first century [2], made by the Japanese Government and industries, a significant growth was forecast from the actual demand of 28 million tons in 1994, to 40 million tons in the year 2010. It is also suggested that forest plantation of some 600,000 hectares in total of domestic and overseas land would be necessary for Japanese paper industries in the year 2010. Changes in the traditional supply of woodchips have caused uncertainty in the industry in terms of the long-term supply of imported wood resources. The environmental movement has made it more difficult for companies to source woodchips from native forests. The Japanese pulp and paper industries have recognized the need to secure a long-term supply of wood resources and major companies have already begun taking action to establish overseas forest plantations. At the end of 1995, a total of 53,000 hectares had been planted overseas.

V. A Joint Venture

The Albany Plantation Forest Company of Australia Pty. Ltd., known as APFL, is a joint venture company established in 1993 by three of Japan's large business companies. This business alliance was formed between Oji Paper Company, Itochu Corporation and Senshukai Company, with the objective of planting 26,000 hectares of Bluegum trees (Eucalyptus globulus) in the Albany region, located some 400 kilometers south-west of Perth in Western Australia, by the year 2003. The Bluegums will be processed into woodchips locally and exported to Japan for paper manufacture towards 2003 and thereafter.

Oji Paper Company, Japan's largest paper and paperboard manufacturer, holds a fifty-one per cent share

in the APFL joint venture. Established in 1873 and merged with Honshu Paper Company, Oji Paper Company with its experiences in its long history in the industry was the second largest in the world in 1997, only after the International Paper Company of the United States (Table 5). While some eighty-five percent of land in Japan are covered by bush and forest, Oji Paper has the largest private land holdings. It also has 17 paper mills and 23 manufacturing plants in Japan and its consolidated annual turnover is more than US $ 9 billion. In addition to producing pulp or paper in Canada, New Zealand, Brazil, USA, Germany and Thailand, the company is eager to secure more overseas forest plantations in order to consolidate the supply of paper in the future.

Itochu Corporation, known as C.Itoh & Co., is one of the giant general trading companies (Sogo shosha) of Japan, and it has a thirty per cent share in the APFL. Founded in 1855, Itochu, with 879 subsidiary and associated companies worldwide, is engaged in business operations that range from the distribution of raw materials for industrial users to the provision of finished products for distribution channels and a lot of end users. It has an annual turnover of more than US$100 billion. The corporation is also moving aggressively into new business fields, including satellite communications, to strengthen its position in the new multimedia industries. As for overseas forest plantation, this globally integrated company has also been committed to some other joint ventures than this APFL project.

Senshukai Company is one of Japan's leading non-store businesses and direct marketing firms, and has a nineteen per cent share in the joint venture. Since the establishment of the company in 1955, its business has rapidly grown, featuring mail-order catalogue sales to its 1.93 million personal customers in the catalogue delivery list, and a uniquely organized purchasing club system called 'hanpukai', which focuses on female employees of both public and private firms. Senshukai offers a broad selection of goods ranging from fashion and sportswear to home furnishings, household products, general goods, publications and other items for infants and children. In the fiscal year of 1997 its turnover was 186 billion yen (US$1.5 billion) with an operating profit of 1.5 billion yen and a net profit of 0.7 billion yen. The number of employees was 841. The company joined the APFL project with a thorough understanding of the importance of securing paper resources on a long-term basis since it consumes approximately 30,000 tons of paper per annum for the production of its direct marketing materials, such as catalogues, brochures and magazine publications.

Ⅵ. APFL Forest Plantation Project and Key Success Factors

When selecting suitable sites for plantation projects before the establishment of the APFL in 1993, the investors jointly made a feasibility study on major factors, based on their experiences in overseas forest plantations in the past. It included the following factors:

* Stable economic, political and legislative conditions.
* Suitable local partner (s) with adequate technological expertise.
* The growing conditions of a selected tree (s) and productivity performance.
* Land availability for the commercial size of the project.
* Economic assessment of costs and infrastructure.
* Any nationwide and local environment issues.
* Total feasibility of the long-term project.

Australia is a natural resource rich country nicknamed the "Lucky Country." Its biggest international trading partner and exports destination has been, and still is, Japan. Australia's annual exports to Japan amounted to Australian Dollars (A$) 16.8 billion in 1997, compared with its export to the United States of

America of A$6.3 billion in the same year (Table 6). Japanese imports from Australia consist of coal, iron ore, non-ferrous metals, gold, petroleum, wood, textile fibers, meat and fish. Australia imports from Japan such products as automobiles, electrical appliances, office and factory machines, iron and steel , rubber products and photographic equipment.

Throughout the long history of international trade, the countries of Australia and Japan have had good relations. The matter of the political environment was easily overcome and there should be no serious political or diplomatic difficulties between these two countries in the foreseeable future. Such a circumstance is one of the factors which made the project feasible and on schedule without much problem.

The Albany region of Western Australia met a number of the key criteria for an overseas plantation project. The climate conditions of the Albany area meant that the Tasmanian Bluegum could be successfully grown. As for the availability of land in the region, there are over 400,000 hectares of cleared agricultural land suitable for growing Bluegums. The existing infrastructure also makes Albany, which is by the ocean, and its suburbs more attractive. The close proximity of the plantation area to the port is another key factor to the success of the project when production and exportation are considered.

The presence of a most suitable local partner is also a crucial key factor for the long-term, large-scale project. The joint venture company definitely needed a partner with the technical and managerial expertise to establish and maintain the Bluegum plantation. In the Albany region, CALM already has a history of growing Bluegum trees since 1988. Their technical expertise and experience were considered highly valuable. In 1993 CALM was at a stage where it required a private investor to fund the expansion of its own plantation projects in the region. The mutually beneficial agreement between the APFL and CALM was then formalized. CALM is responsible for planting , managing and maintaining the trees for the twenty-five year term of the agreement. CALM has a Sharefarms plantation unit within its own organizational structure. The unit includes a sub-unit or group called South Coast Sharefarms (SCS). This SCS is the one directly responsible for acting as the sole agent for the APFL.

Local community perceptions of the APFL project are very important to its overall success. At the beginning of the initial establishment phase of the project there were a few negative perceptions of the idea of commercial tree plantations on farms. Some people thought it would mean a destruction of the farming community as farmers planted their entire property with trees and then moved away from the land. People were worried the community would be taken over by trees. Over time, however, the local community has come to realize the many benefits of commercial tree crops. The fall in commodity prices for wheat, wool, cattle, etc. means that farmers can no longer rely on traditional farming practices for a secure income. The majority of landowners in the community are very grateful to the Japanese investors for giving them the opportunity to integrate a commercial tree crop on their property and thereby create a diversified income. The APFL and CALM estimate that there is a small percentage of landowners who are satisfied with their traditional farm crops and do not see a need to plant commercial tree crops on their property. They also estimate that a large percentage of landowners are considering a commercial tree crop but, at the moment, they are waiting to see some results before making the decision to join the APFL project. It is this group of landowners that the APFL wishes to target in its promotional strategy.

The Bluegum plantations are integrated into cleared land under sharefarming agreements with local landowners. Sharefarming means that landowners provide their own land in exchange for annual fees and/or lump sum payments at harvest time. The land remains the property of the farmer and a 28-year contract is made between the APFL and each farmer (landowner) to grow two 10-year rotation crops of trees. CALM (to

be exact, SCS) works with the landowner to provide the best treecrop plan for the property. The Bluegums can be planted in large-scale plantations or can be integrated in belts around other crops and pasture. The joint objective is to plant 26,000 hectares of Bluegums (33 million trees) in the Albany region of Western Australia by the year 2003.

Ⅶ. Opportunities and Threats

The Japanese business partners have made a long-term capital investment in the APFL. A$ 60 million has been invested during the establishment phase of the project and, in addition, another A$80 million investment will be prepared for the operation over the life of the project. They are committed to the success of the project. This long-term commitment gives landowners a feeling of confidence and there is a secure export market for their harvested crops. It also gives APFL considerable negotiating and bargaining power with other parties.

APFL's strategic alliance in collaboration with CALM is a critical success factor in this project. The South Coast Sharefarms unit of CALM has the much needed capability to successfully project and manage the Bluegum plantations. APFL and CALM have developed a good relationship during the time the project has been operating since 1993. The project also has the support of the State Government of Western Australia via the Albany Hardwood Plantation Agreement Act of 1993, and is welcome by the local community.

For the time being, the APFL is not making a sufficient net profit and is not returning dividends to its parent companies. It must be emphasized, however, that this is a long-term project of 30 years or more, and considerable outlays must be made by the APFL in order to establish the future profitability of the tree crops.

The APFL project has the potential to offer the Albany region many economic and environmental opportunities. The economic benefit to the local region will be realized by creation of employment, investment in infrastructure, and cash payments to landowners. These benefits will have a 'flow-on' effect throughout the local community. The project also gives landowners and CALM the opportunity to address environmental problems such as salinity, water-logging and soil erosion on agricultural land. Without such an investment as the APFL project, CALM and local landowners would not be able to afford the costs involved in reestablishing native vegetation. The expected increase in demand for paper products not only in Japan but around the world will also provide strong export market opportunities for APFL's harvested Bluegum crops.

On the other hand, securing agricultural land is one of the most challenging aspects of the plantation project. APFL has a couple of main competitors running similar Bluegum sharefarming schemes in the neighboring parts of Western Australia. It has increased the competition for securing suitable agricultural land. Under such competitive circumstances, APFL and CALM have set a target to plant 3,000 hectares of Bluegum trees a year. They consider this to be a reasonable and sustainable target and are confident in their ability to achieve it. APFL's competitors may secure more land in the short-term, but such land may include a large percentage of 'marginal land ', which means land that has a less rainfall and poorer soil condition, and is at a further distance from the Port of Albany.

Exchange rate fluctuations of foreign currencies are another threat to APFL. Appreciation and depreciation of the Australian dollar against the US dollar and Japanese yen will be an important factor in the capital outlay required by APFL to establish and maintain the long-term plantation project.

Ⅷ. Marketing Strategies

・Product:

Before a Bluegum plantation can be established on a landowner's property, CALM conducts a site assessment. The data collected from the assessment is entered into CALM's computer model to predict the tree crop's potential growth. For the farmland to be considered suitable, it must have been pastured for a minimum of five years, have a good fertilizer history, have suitable soils, be in an area that receives at least 600 millimeters of rain a year and be no more than 200 kilometers by road from the Port of Albany. If the land is found to be suitable, then negotiations between the landowner and the APFL commence and a 28-year contract can be signed.

CALM undertakes most of the work from that point onwards. This includes establishing, managing and maintaining the crop. Specifically, CALM is responsible for the following activities:

* Site assessment, site preparation, weed control, provision of seedlings, fertilizing and insect control, during the establishment phase.
* Second year weed control.
* Subsidizing fencing costs for landowners.
* Fire risk management.
* Management of growing trees, monitoring and recording growth.
* Arranging harvest of the crop.
* Thinning the coppice or replanting after the first year.
* Management of the second crop.
* Overall project management.
* Maintaining contract and liaison with the landowner throughout the term of the contract.
* Ongoing research and development.

CALM's scientists have developed a new breed of Tasmanian Bluegum (Eucalyptus globulus) especially for Western Australian conditions. The new breed, called the 'Western Bluegum', grows more quickly than the Tasmanian Bluegum and yields more timber. The Western Bluegum is used in all plantations of APFL and CALM. While the trees are growing, landowners are responsible for constructing and maintaining firebreaks in the plantations and erecting the fences that surround them. APFL is responsible for funding all of CALM's establishment and management costs throughout the terms of the contract. APFL also has the responsibility to provide an export market for the crop at the time of harvest.

As APFL's commitment to landcare in the region, a scheme for landowners to plant alternative non-commercial species of trees on their property was introduced in 1995. APFL recognized that farmers need the environmental benefits of trees on all areas of their farms, not only in areas suitable for growing Bluegums. These alternative species of trees are not harvested by CALM or APFL, and remain the property of the farmer (landowner). This scheme therefore allows farmers to improve the productivity of their own land right across their farm.

・Pricing:

The APFL developed three payment options for landowners that join the sharefarming project. Payment options are negotiated on factors such as site productivity, the total area planted and haulage distance from the Port of Albany. Negotiations with landowners are often extensive, taking around two or three months to complete.

The first option for landowners is a full crop share. This is a lump sum payment paid to the landowner after each harvest time only. The landowner receives a percentage of the total crop value with an average of 33 percent. The second option for landowners is a partial annuity. The landowner retains their full share of the harvest revenue but receives, in advance, an annuity of A$55 to A$95 per hectare planted per year. Partial annuities are indexed to the CPI, and are deducted from the harvest lump sum at the time of each harvest. The larger the partial annuity, the smaller the lump sum at the time of the harvest. The third option for landowners is a full annuity. They receive an annual payment only and are not entitled to a share of the harvest revenue. Annual payments range from A$150 to A$220 per hectare per year.

The total value of the harvest will be based on the prevailing export market price of hardwood chips. The contract price paid to landowners for their share of the crop is calculated by subtracting the cost of harvesting, haulage, processing and loading at the Port of Albany, from the market price. Of some 3,000 hectares in total planted every year by the APFL, 300 hectares are by full crop share, 500 by partial annuity, 1600 by full annuity agreement, and the APFL directly purchases the remaining 600 hectares of land as a part of the project for this Bluegum plantation.

・Place (Distribution):

The harvested crop will be processed locally and then exported as woodchips through the Port of Albany to Oji's pulp and paper mills in Japan. The APFL is currently conducting negotiations with the State Government and other parties to fund the expansion of the Port and the construction of local processing facilities. The APFL estimates that more than 10 million tons of wood chips will be exported from the year 2003 and during the period of the project.

・Promotion:

The overall objective of APFL's promotion is to encourage landowners to join the Bluegum plantation. Both APFL and South Coast Sharefarms unit of CALM understand that, by establishing a good reputation in the Albany region and by developing good relations with landowners, they will encourage more landowners to join the project in the future. The key messages communicated to landowners and members of the local community are in support of this strategy and include the followings:

* CALM has been growing Bluegum trees since 1988 and has developed the technical expertise to make the project successful. CALM is a reliable and experienced group of specialists in Bluegum plantations.
* Three of Japan's large companies have made a long-term capital investment and, therefore, the AFPL project is financially secure.
* There is a strong and guaranteed export market for the trees upon harvest.
* Tree plantations offer many land care benefits to cleared agricultural land.
* Farmers can receive a secure income and improve their farm productivity for virtually no capital outlay.
* CALM and APFL are committed to overall landcare in the Albany region.

The CALM and APFL have used a number of methods in promoting the Bluegum plantation project not only to the local community but also to communities throughout Australia [3]. CALM has organized visits to local properties with Bluegum crops and public seminars have been held to promote tree growing. The local media, including talk-back radio, the community newspaper and Western Australia's agricultural newspaper and industry media have also been used to promote the project. CALM also includes details of the APFL

project in their quarterly 'Landscope Magazine', a glossy conservation, forest and wildlife publication distributed to subscribers throughout Western Australia. Further promotional initiatives include the production of a five-minute video, color brochures that explain the background to the project and how the sharefarming scheme works, and signboards on roadside properties at APFL Bluegum plantations. The signboards display the logos of both APFL and CALM, and aim to increase the identity of the project in the community.

CALM's South Coast Sharefarms unit employs three full-time area coordinators and a liaison officer. Their roles include maintaining regular communication with the existing farmers on contract, and promoting the benefits of the project to potentially interested farmers. The Japanese joint venture companies have located two full-time employees in Albany to administer the APFL project. The project representatives from both CALM and APFL have given talks to local community groups. Words-of-mouth are also very powerful channels of communication about the Bluegum project in the Albany area. APFL and CALM have generated favorable words-of-mouth communication since the project was established.

Ⅸ. Discussions

The APFL project is already a long-term one as it was launched in 1993. In addition to the APFL, Oji Paper Company has been committing itself not only to some plantation projects in other parts of Australia, but also in other Asia Pacific countries) . The Japanese parent companies, headed by Oji Paper, are planning a big picture for the future to incorporate the needs of the paper and pulp industries and the needs of the environment as well. However, these large-scale projects constantly require huge capital injections over the long period of time of ten or twenty years.

Economic conditions are often unstable and exchange rates of foreign currencies are not controllable. Therefore, with many unpredictable and uncontrollable factors of the marketing macro-environment, there have to be some crucial discussions on any potential for and threat against the continuation of long-term projects with such a heavy financial burden.

Another important factor for current and future discussions is greenhouse gas. At the Kyoto Protocol to the United Nations Framework Convention on Climate Change [4], discussions were held representing the third UN session on climate change. It is significant that it represented, for the first time, legally binding commitments by the developed countries to reduce their greenhouse gas emissions and address the threat of climate change.

The Kyoto Protocol also provides for trading of emmission entitlements, enabling countries to buy emission credits from other countries where emission reductions can be made at low cost. In the year 2005, negotiations will commence for a new Protocol for the period beyond the year 2012. Details of the trading system plan have yet to be worked out. However, if introduced, it will initiate a lot of discussions on ongoing and future forest plantations around the world.

Carbon sinks, such as forest plantations, could be incorporated into an emissions trading system by allocating permits for the amount of carbon sequestered. Plantation operators could then sell these permits in an emissions trading system. At this stage, however, any decision has not been made on emissions trading or incorporation of carbon sinks into such a system, and there is no efficient system in place to provide carbon credits to owners of forest plantations which could be sold in such a trading system.

X. Conclusion

Any business company operates within a complex, dynamic, external macro-environment including natural environment, which is usually difficult to be controlled. At the same time, it is the task of any marketing-oriented firm to link the resources (technology, financing power, human resources, etc.) of the organization to the requirements of current and future markets, within the framework of opportunities and threats presented by this macro-environment. At least, the firm has to understand, and anticipate, to a certain or considerable extent, and react to macro-environment forces.

By investing in the joint APFL forest plantation project in Western Australia, the Japanese investors have taken a holistic and socially responsible approach to meeting their corporate business objectives while reacting in efforts for improving the harsh environment. The project is on target so far to achieve the objective of planting at least 26,000 hectares by the year 2003. According to an interim report of APFL, there are currently more than 160 landowners (farmers) involved in the project, and approximately 14,000 hectares, including the APFL's own land of some 5,000 hectares, have been planted since 1993. It is also geared to respond to the future market of quality paper materials and to become profitable on a long-term basis.

The APFL strategic business alliance has already been giving solutions to some crucial problems of natural environment in the region such as salinity, soil erosion and water-logging on agricultural properties. By helping to control salinity, it will also help reduce Western Australia's estimated annual production loss in the agricultural industry. There are no negative effects of the forest plantation project under this 'Green Business Alliance'. Rather, positive factors are expected to enhance the reputation of the project and to lead to further expansion of forest plantations.

ENDNOTES

1) Some large-scale international mergers and acquisitions are under way. In 1998 the merger between two European paper companies (Enco of Finland and Stora of Sweden) newly formed a giant manufacturer to make it the world's No.1 paper producing company. Such trends give great changes to the 1997 world business rankings shown in Table 5.

2) The report made by the Japan Paper Resources Forum in 1996 also advised that , under the situation that utilization of recycled papers was reaching an upper limit of some 54 per cent of total raw materials for paper production in Japan, securing for raw materials including new plantation projects in the future would be of prime importance to the Japanese paper industry.

3) In addition to the APFL project, Oji Paper Company is already committing to similar forest plantation projects in Victoria, East Victoria and Brisbane in Australia , and also in New Zealand and Vietnam.

4) The convention was held in Kyoto from December 1 to 10, 1997. Developed countries have collectively agreed to reduce greenhouse gas emissions by at least five per cent below the year 1990 levels by the years 2008 to 2012. However, there still remain a lot of discussions including calculation method of gas emissions and target of reduction for each country before it is implemented.

REFERENCES

Albany Plantation Forest Company 1997 'Now Growing in the Great Southern' APFL Information Booklet : 3-8

Australian Bureau of Statistics 1998, Australian Economic Indicators: 46-51

Australian Bureau of Statistics 1998, International Merchandise Trade: 17-19

Australian Bureau of Statistics 1998, Measuring Australia's Economy: 50-51, 145

Australian Bureau of Statistics 1999, Year Book Australia 1999: 379-92, 431-49

CALM 1995 'A Commitment to Customer Service': 1-16, 19

CALM 1996 'People in CALM Places': 2, 6

CALM 1997 'Halt the Salt!', LANDSCOPE: 1-5

CALM 1997 'Branch Out With Calm': 1-14

CALM 1998 ' Breeding Better Blue Gums': 1-4

CALM 1998, Annual Report 1997/1998 : 7-24, 40-48, 64-69, 82

CALM 1998 'Conserving Ecosystems and Balancing Uses' CALM Publicity Brochure: 1, 4, 6

CALM 1999 'WA leads in tree planting' CALM News: May-June 1999: 1-2

Evans, R.E. & Burman, B. 1995 ' Principles of Marketing': 61-77

Itochu Corporation 1997, Company Brochure: 17, 36-37

Japan Overseas Plantation Center 1999 'Harmonizing the Environment and the Production in Overseas Forest Plantation' JOPC Information Booklet: 1-12

Japan Paper Association 1998, Pulp and Paper Statistics 1998: 3-18

Japan Paper Association 1999, Journal of JPA - 1999 Special Issue: 3, 14, 18, 24, 30

Japan Paper Resources Forum 1996 'Report on Environment and Future Securing of Paper Resources' : 1-15

Japan Pulp & Trading Company 1996, Paper & Pulp Statistics 1996: 41-48

Kotler, P., Leong, S.M., Ang, S.H. and Tan, C.T. 1996 'Marketing Management - An Asian Perspective' : 190-93

Lewis, J.D. 1990 'Partnerships for Profit': 3-13, 16-23, 226-58

Oji Paper Company 1997, Company Brochure: 1-4, 31-39

Ottman, J.A., 1992 'Green Marketing': 48-71

Quelch, J.A. Leong, S.M., Ang, S.H. & Tan, C.T. 1996 'Cases in Marketing Management & Strategy' : 465-68

Senshukai Company 1997, Company Brochure: 2-4

Shea, S. 1998 ' Western Australia's Development and Future Prospects for Tree Crop Industries' : 1-6, 15-17

Shea, S., Butcher, G., Ritson, P., Bartle, J. & Biggs P. 1998 'The Potential for Tree Crops and Vegetation Rehabilitation to Sequester Carbon in Western Australia': 1-2, 14-15, 19

Yoshino, M.Y. & Rangan, U.S. 1995 'Strategic Alliances': 3-24, 51-70

Table 1:

World Top 10 Paper and Paperboard Producing Countries (1995 and 1997)

(thousand tons)

	1995	1997
1 USA	81,001	86,477
2 Japan	29,663	31,015
3 China	24,000	27,440
4 Canada	18,705	18,969
5 Germany	14,827	15,930
6 Finland	10,942	12,919
7 Sweden	9,169	9,779
8 France	8,615	9,143
9 South Korea	6,877	8,364
10 Itary	6,802	7,532
Other countries	67,190	72,294
Total	277,791	299,092

Source: Pulp & Paper International

Table 2:

Pulpwood Supply and Consumption of Japan

(thousand cubic meters)

		1990		1997	
		Supply	Consumption	Supply	Consumption
Softwood (e.g. pine tree)	Domestic	9,015	N/A	8,634	N/A
	Import	8,605	N/A	7,416	N/A
	Total	17,620	17,767	16,056	16,131
Hardwood (e.g. Eucalyptus)	Domestic	8,950	N/A	3,992	N/A
	Import	11,378	N/A	18,054	N/A
	Total	20,328	20,373	22,046	22,252
Total of Pulpwood	Domestic	17,964	N/A	12,626	N/A
	Import	19,983	N/A	25,470	N/A
	Grand Total	37,947	38,140	38,096	38,383

Source: Ministry of International Trade and Industry of Japan

Table 3:

Pulpood Import of Japan by Origin

(thousand cubic meters)

Country of Origin	1990			1997		
	Soft	Hard	Total	Soft	Hard	Total
1 USA	4,989	3,438	8,427	2,960	5,835	8,795
2 Australia	173	4,238	4,411	2,169	4,839	7,008
3 Chile	477	1,875	2,352	187	2,510	2,697
4 South Africa	-	504	504	-	1,868	1,868
5 Canada	1,875	123	1,998	476	157	632
6 New Zealand	397	119	516	525	88	613
Other countries	714	1,017	1,731	897	2,815	3,712
TOTAL IMPORT	8,625	11,314	19,939	7,213	18,112	25,325

Note: ' Soft ' and ' Hard ' denote Softwood and Hardwood respectively.
Source: Japan Paper Association

Table 4:

Top Five Paper and Paperboard Producers in Japan

(1997 Financial Year)

	Annual turnover (billion yen)	Net Profit (billion yen)	Total assets (billion yen)	The Number of employees
1 Oij Paper Company	1,348	10.9	1,795	13,789
2 Nippon Paper Industries	1,038	18.4	1,225	6,847
3 Daishowa Paper Mfg .Co.	370	4.0	594	3,714
4 Daio Paper Corporation	308	2.5	447	2.986
5 Rengo Company	285	2.6	292	3,541

Note: Consolidated accounting figures were adopted.
Source: Japan Company Handbook, Toyo Keizai Inc.

Table 5:

World Top 20 Paper and Paperboard Makers (1997)

apan	Turnover (US $ million)	Profit (US $ million)	The Number of employees
1. International Paper (USA)	16,150	1,107	82,000
2. Oji Paper Company(Japan)	9,473	923	14,044
3. Kimberly-Clark (USA)	7,365	1,392	57,000
4. UPM-Kymmene (Finland)	7,363	1,428	33,814
5. Fort James (USA)	7,259	1,197	28,000
6. Nippon Paper Ind.Co.(Japan)	7,038	661	14,169
7. KNP BP (the Netherlands)	6,065	449	23,111
8. Georigia Pacific (USA)	5,556	1,087	46,500
9. Svenska Cellulosa (Sweden)	5,425	864	33,399
10. Arjo Wiggins Appleton (UK)	5,349	245	18,904
11. Enso (Finland)	5,274	759	19,870
12. Mead (USA)	5,077	438	16,600
13. Store (Sweeden)	5,045	692	20,431
14. Champion International (USA)	4,766	325	21,860
15. Store Container (USA)	4,689	-102	24,600
16. Weyerhauser (USA)	4,609	970	35,778
17. Jefferson Smurfit Group (Ireland)	3,902	370	25,398
18. Amcor (Australia)	3,616	94	25,088
19. Metsa-Seria (Finland)	3,325	323	14,078
20. Jefferson Smurfit Corp. (USA)	3,238	145	15,800

Source: Pulp and Peper International